## REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 19 through 25 are now presented for examination. Claims 19, 22, 23 and 24 have been amended to define still more clearly what Applicant regards as his invention, in terms which distinguish over the art of record. Claim 25 has been added to assure Applicant of the full measure of protection to which he deems himself entitled. Claims 19, 22, 23 and 25 are the only independent claims.

Claims 19-24 have been rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,841,520 (Taniguchi). With regard to the claims as currently amended, this rejection is respectfully traversed.

Independent Claim 19 as currently amended is directed to scan type exposure apparatus in which a first object is placed on a first stage and a second object is placed on a second stage. A projection optical system projects a pattern of the first object onto the second object and a scanning mechanism scanningly moves the first and second stages in timed relation with each other in a scan motion relative to the projection optical system while the pattern of the first object is projected by the projection optical system onto the second object. A signal system is systemized to store data corresponding to a change in exposure condition produced in response to scan motion of at least one of the first and second stages in accordance with scan acceleration or scan speed. The data is measured beforehand by obtaining data of a projected image of the pattern of the first object being formed on the second object through the projection optical system

while scanningly moving at least one of the first and second stages. The signal system is further systemized to control drive of the first and second stages during one scan motion in an actual exposure process to compensate for a change in exposure condition while reflecting a correction value, as determined on the basis of the stored data, to the driving of at least one of the first and second stages.

Independent Claim 22 as currently amended is directed to a device manufacturing method in which a pattern exposure is performed using a scan type exposure apparatus wherein a first object is placed on a first stage and a second object is placed on a second stage; a projection optical system projects a pattern of the first object onto the second object; a scanning mechanism scanningly moves the first and second stages in timed relation with each other in a scan motion relative to the projection optical system while the pattern of the first object is projected by the projection optical system onto the second object; and a signal system is systemized to store data corresponding to a change in exposure condition produced in response to scan motion of at least one of the first and second stages in accordance with scan acceleration or scan speed. The data is measured beforehand by obtaining data of a projected image of the pattern of the first object being formed on the second object through the projection optical system while scanningly moving at least one of the first and second stages. The signal system is further systemized to control drive of the first and second stages during one scan motion in an actual exposure process to compensate for a change in exposure condition while reflecting a correction value, as determined on the basis of the stored data, to the driving of at least one of the first and second stages. The second object pattern exposed by the scan type exposure apparatus is developed and

a circuit pattern can be formed on the basis of the developed exposed pattern.

In Applicant's view, Taniguchi discloses a scanning type exposure apparatus that has a mask stage for scanning a mask across an illumination area on the mask, a projection optical system for projecting an image of a pattern on the mask onto a photosensitive substrate, and a substrate stage for scanning the photosensitive substrate across an exposure area. An image pickup unit having its light-receiving section provided on the substrate stage, photoelectrically detects an image of a mark pattern on the mask, and a combining unit combines signals outputted from the image pickup unit during a period in which the light-receiving section is scanned across the exposure area in synchronization with scanning for the mark pattern across the illumination area. Image formation characteristics or a position of the image of the mark pattern is determined on the basis of an output of the combining unit, which may be corrected before actual exposure. Correction is also performed by using synchronization errors or by use an edge scan type sensor in place of the image pickup unit.

It is a feature of Claims 19 and 22 as currently amended that in an actual exposure process in which a signal system controls drive of first and second stages to compensate for a change in exposure condition, the control of drive of the first and second stages through the signal system is carried out during one scan motion of the actual exposure process. Taniguchi may disclose measurement of image formation characteristics of a scanning exposure apparatus. As disclosed at least at lines 37-41 of column 30 in Taniguchi, if the desired accuracy is not achieved for positional discrepancy using the measured image formation characteristics, a signal is fed to a stage controller to lower the scanning velocity. As a result, Taniguchi must require

succesive scan motions to adjust the scanning velocity. It is therefore not seen that Taniguchi's multiple scan motions in any manner teaches or suggests that the drive of the first and/or second stage is controlled by a signal system to compensate for a change in exposure conditions (i.e., image formation characteristics) during one scan motion based on stored data as in Claims 19 and 22. Accordingly, it is believed that Claims 19 and 22 as currently amended are completely distinguished from Taniguchi and are allowable.

Independent Claim 23 as currently amended is directed to a scan type exposure apparatus in which a first object is placed on a first stage and a second object is placed on a second stage. A projection optical system projects a pattern of the first object onto the second object and a scanning mechanism scanningly moves the first and second stages in timed relation with each other in a scan motion relative to the projection optical system while the pattern of the first object is projected by the projection optical system onto the second object. A storage unit stores data related to a shift in a projected image due to vibration of the projection optical system. A drive control unit changes the scan speed of at least one of the first and second stages during one scan motion to compensate for a change in the exposure condition on the basis of the stored data.

According to the invention of Claim 23, drive control means changes a scan speed of at least one of first and second stages during one scan motion to compensate for a change in exposure condition based on stored data. As discussed with respect to Claims 19 and 22, Taniguchi discloses measurement of scanning exposure type apparatus image formation characteristics but teaches lowering of scan velocity to obtain a desired precision of positional discrepancy which requires a sequence of different velocity scan motions. Such lowering of scan

velocity as in Taniguchi is directed away from and fails to teach or suggest the feature of Claim 23 of changing scan speed of at least one of first and second stages to compensate for a change in exposure condition by scan speed adjustment carried out by drive control means during one scan motion. Accordingly, it is not seen that Taniguchi teaches anything regarding changing of a drive scan speed of first and second stages by a drive control unit to compensate for a change in an exposure condition during one scan motion based on stored data as in Claim 23. It is therefore believed that Claim 23 as currently amended is completely distinguished from Taniguchi and is allowable.

New independent Claim 25 is directed to scan type exposure apparatus in which in which a first object is placed on a first stage and a second object is placed on a second stage. A projection optical system projects a pattern of the first object onto the second object. A scanning mechanism scanningly moves the first and second stages in timed relation with each other in a scan motion relative to the projection optical system while the pattern of the first object is projected by the projection optical system onto the second object. A signal system is systemized to store data corresponding to a change in exposure condition produced in response to scan motion of at least one of the first and second stages in accordance with scan acceleration or scan speed. The data is measured beforehand by obtaining data of a projected image of the pattern of the first object being formed on the second object through the projection optical system while scanningly moving at least one of the first and second stages. The signal system is further systemized to control drive of the first and second stages during one scan motion in an actual exposure process while reflecting a corrective value, as determined on the basis of the data stored

with respect to deviation of the projected image of the pattern of the first object upon the second object, to the driving of at least one of the first and second stages.

In accordance with the invention of new Claim 25, drive of first and second stages is controlled during one scan motion in an actual exposure process while reflecting a corrective value, determined based on data stored with respect to deviation of a projected image of a pattern of the first object upon a second object, to the driving of at least one of the first and second stages. This feature of Claim 25 is shown at least in Fig. 7 and disclosed the corresponding portions of the specification. No new matter is believed to have been added.

As discussed with respect to Claims 19 and 22, Taniguchi provides for lowering of scanning velocity by successive scans when desired accuracy of positional discrepancy is not achieved using the measured image formation characteristics but fails to suggest any arrangement wherein the drive of the first and second stages is controlled during one scan motion, to compensate for a change in exposure condition. Accordingly, it is not seen that the lowering of scanning velocity as in Taniguchi by successive scan motions in any manner teaches or suggests the feature of Claim 25 of driving the first and second stages of a scan type exposure apparatus during one scan motion in an actual exposure process using a corrective value for drive based on data of deviation of a projected image pattern. It is therefore believed that new Claim 25 is completely distinguished from Taniguchi and is allowable.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 19, 22, 23 and 25, also is patentably defined over the cited art.

Dependent claims 20, 21 and 24 also should be deemed allowable, in their own right, for

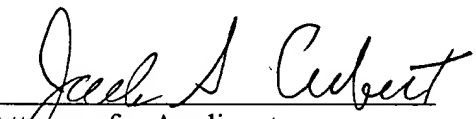
defining other patentable features of the present invention in addition to those recited in independent claim 21. Further individual consideration of this dependent claim is requested.

Applicant further submits that this Amendment After Final Rejection clearly places this application in condition for allowance. This Amendment was not earlier presented because Applicant believed that the prior Amendment placed the application in condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 CFR 1.116.

Favorable consideration and reconsideration, withdrawal of the rejection set forth in the above-noted Office Action and an early Notice of Allowance are also requested.

Applicant's attorney, Steven E. Warner, may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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